

AGRICULTURAL, NUTRITIONAL, AND PHYSICAL FITNESS POLICIES THAT SUPPORT NATIONAL SECURITY

BY

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USAWC STRATEGY RESEARCH PROJECT

**AGRICULTURAL, NUTRITIONAL, AND PHYSICAL FITNESS POLICIES THAT
SUPPORT NATIONAL SECURITY**

by

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ABSTRACT

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To mitigate the potential impact of malnutrition on the military's recruiting pools, Congress, on June 1946, passed Public Law (PL) 396, the National School Lunch Act. Further, Congress declared that PL 396 was drafted as a matter of national security and as policy to safeguard the health and well-being of the nation's children. Sixty-four years later in April 2010, a group of retired U.S. general and flag officers declared that the escalating rates of childhood obesity in the U.S. pose a serious threat to our national security. Their concern specifically focuses on childhood obesity's potential impact on the military services' recruiting pools. An obvious dichotomy exists between Congress' intent with PL 396 and the obesity crises today. This paper analyzes U.S. agricultural, nutrition, and physical fitness policies to show that those policies have contributed to childhood and adult obesity and to an increasingly overweight population. It shows that the industrial diet that is in currency today is the main cause behind the obesity crises and that it is counter to what is the human natural diet. It then further provides recommendations to realign the value of a healthy and fit population with the requirements of national security.

AGRICULTURAL, NUTRITIONAL, AND PHYSICAL FITNESS POLICIES THAT SUPPORT NATIONAL SECURITY

"Let food be thy medicine, thy medicine be thy food"¹ —Hippocrates

To mitigate the potential impact of malnutrition on the military's recruiting pools, Congress, on June 4, 1946, passed Public Law (PL) 396, the National School Lunch Act. By enacting this law, Congress declared that it was its policy to safeguard the health and well-being of the nation's children.² Most importantly, Congress drafted the law as a matter of national security.³ Almost sixty-four years later on April 20, 2010, a group of over a hundred retired U.S. general and flag officers, part of a non-profit organization called *Mission: Readiness*, distributed a press release that stated that the United States is in danger of producing a population that is "too fat to fight".⁴ The release declared that the escalating rates of childhood obesity in the United States, if left unchecked, pose a serious threat to national security.⁵ The organization's concern specifically focuses on childhood obesity's potential impact, via a reduction in the number of qualified applicants, on the various military services' recruiting pools.⁶ It is ironic that PL 396 was enacted to mitigate the effects of malnutrition. Malnutrition, like obesity, also impacts the military's recruiting pools because both are health discriminators. The effects of undernourished children thus impact national security just as much as poorly nourished but overweight or obese children. If childhood obesity, now part of what is being called an epidemic,⁷ does have potential to critically impact the U.S. military's recruiting pool in the future and because the majority of applicants for enlistment into the military come from the younger age groups, *Mission Readiness'* arguments may be valid. This paper analyzes current and previous U.S. policies in the

areas of agriculture, nutrition, and physical fitness to demonstrate that those policies have contributed not only to childhood obesity but also to adult obesity and to an increasingly overweight population. It then further provides recommendations to realign the value of a healthy and fit population with the requirements of national security.

What proximate factors have contributed to this “serious” threat to national security in the sixty-four years since Congress passed PL 396 and *Mission: Readiness* issued their press release? What drove nutrition’s impact on national security from one end of the spectrum – under nourishment – to the other end – over nourishment? Moreover, is *Mission: Readiness*’ concern about the impact of the rising rates of childhood obesity in the United States on future recruitment pools a valid one? If it is, are the rising rates of obesity truly a threat to our national security just as malnourishment was in 1946? More importantly, if the answers to these are “yes”, what can our government, business, and civic leaders do now to remedy or mitigate the situation before it is too late? What are the recommended approaches that can be implemented realistically to remedy or mitigate the situation? Lastly, if childhood obesity is truly a threat to the military’s recruitment efforts and thus to national security, and government, business, and civic leaders do not remedy or mitigate the situation, what unilateral options are available for the military to undertake? The answers to these questions are provided in the following pages. They are provided through narratives on the general history of human nutrition, the history and background of factors that led to the current obesity epidemic, and the background on U.S. agricultural, nutrition, and physical fitness policies.

The Basic Problem

The dichotomy between the intent of PL 396 and what *Mission: Readiness* argues is due to outdated policies in agriculture, nutrition, and physical fitness. Further, these policies are not synchronized to holistically effect a healthy population.

Agricultural policy is focused on industrial-type food production to ensure food security and mitigate hunger and malnutrition;⁸ nutrition policy is aimed at ensuring our food supply is safe and nutritious;⁹ and physical fitness policies are recommended but not regulatory in public schools.¹⁰ A further misalignment in federal agency responsibility for the promulgation of nutrition and physical fitness guidance contributes to the problem.

The U.S. Department of Agriculture (USDA), as the lead federal agency for the promulgation of nutritional guidance and farming policy, has a potential conflict of interest. This conflict occurs because farming, which is heavily industrialized, is managed by big businesses that have powerful lobbies and influence in Congress.¹¹

The Department of Health and Human Services (HHS), which is probably the right agency to solely manage and publish national guidance on nutrition, shares that responsibility with the USDA¹² despite three of HHS' sub-agencies having the technical expertise to do so - the Center for Disease Control (CDC), the National Institutes of Health (NIH), and the Food and Drug Administration (FDA).

Several federal agencies are responsible for ensuring the nutritional efficacy, health, and physical fitness of the general population. Among the major ones are: the USDA, HHS, and Department of Education (DOE) (for children). Three sub-agencies of HHS – the CDC, FDA, and NIH - play a major role in technical research in health, nutrition, and food and drug safety. The nutrition policy coordinator for the USDA is the Center for Nutrition Policy and Promotion (CNPP). CNPP develops and promotes

dietary guidance that links scientific research with the nutritional needs of consumers.¹³ While not an agency, the President's Council on Physical Fitness, Sports and Nutrition (PCFSN) – formerly called President's Council on Physical Fitness and Sports - does provide support at the policy level by encouraging Americans to adopt a healthier lifestyle through regular physical activity.¹⁴ The PCFSN reports to the HHS Secretary, although its primary audience and emphasis are children and adolescents, an audience routinely handled by DOE. As further evidence of the increased attention on obesity, President Obama recently directed PCFSN to add "Nutrition" to its name.¹⁵ While all three major agencies – USDA, HHS, and DOE - publish separate guidance on nutrition, this guidance is coordinated only between HHS and USDA.¹⁶ Coordination through a central mechanism such as an Inter-agency Policy Committee (IPC) would ensure that nutrition policy is thoroughly reviewed and staffed with other federal agencies whose interests and policies are affected. Moreover, each agency provides separate recommendations on physical fitness but, like nutritional guidance, these recommendations are not centrally coordinated. These uncoordinated policies contribute to the obesity problem because of their separate and different, and thus potentially confusing, guidance to the public. Since a single agency is not speaking solely as the responsible government agency, the public may opt not to listen at all. This problem can be resolved at either the congressional or executive branch level by designating a lead agency for nutrition policy promulgation. That is, HHS should be the sole lead agency publishing nutritional guidance instead of sharing that responsibility with USDA. Such an action would also delink potential conflicts of interest with industrial farming.

Emerging nutritional research has also not been integrated into these policies and there seems to be a lag of approximately five to ten years between research and the publishing of guidelines. As an example, the government's current nutritional guidance is based on information publicly available about a decade ago.¹⁷ This guidance is seen as outdated, ineffective, and contributing to the problem.¹⁸ An analysis of the basic structure of the guidance shows its concept has not changed much since 1940, when it was first published as the USDA Food Guide.¹⁹ In the 1990's the guidance was provided to the public in the graphic format of a pyramid.²⁰ Modified in structure incrementally three times since then, the concept for nutritional recommendation has not changed much.²¹ An analysis of the recommendation over this period of time shows that the guidance basically remains a high carbohydrate, moderate protein, low fat diet. This recommendation is not necessarily entirely erroneous but its increased focus on grains as the main source for the carbohydrate group has recently been seen as a possible contributor of weight gain tendencies.²² The focus on grains as the carbohydrate group's main source actually increased in 1984 from that recommended in 1956.²³ This increase is an effect of USDA subsidies to wheat farmers which were meant to assist the farming industry in remaining solvent but have become an example of one of the conflicts of interest mentioned earlier.²⁴

Emerging research now shows that what the proper recommendation should be is a shift in emphasis from grains as the main source of carbohydrates to vegetables as the main source of carbohydrates. This shift mimics the pre-historic human diet and mitigates the human body's tendency to readily transform grain-based carbohydrates into sugar, the excess of which is then stored as fat.²⁵ Vegetables, protein, and animal

fat, on the other hand, are not as readily transformed into sugar.²⁶ This shift does not necessarily mean to exclude all grain as a source of nutrition. There are ethnic populations – the Chinese and Japanese, for example - that utilize grain such as rice as the focal point of their meal. In fact, the Japanese word for meal – “gohan” – is also the same word for steamed rice.²⁷ Thus, these ethnic races may have genetically adapted to grain as a food source.²⁸ Additionally, other grain such as wheat, when used as “whole”, in moderation, and without any added sugar, does not necessarily contribute to obesity. Rather, the excessive amount that is recommended at the expense of other carbohydrates such as vegetables and fruits and the lack of clarification for “whole” grain makes the guidance faulty. The correction of this guidance, through the proper balancing of the carbohydrate group and specifying whole grain, is an important first step towards an overall solution.

Next, the amount of sugar in the diet must be reduced. Research now shows that refined sugar becomes addictive with increased use over time.²⁹ Moreover, the population’s propensity for food with added-sugar has increased.³⁰ The food industry has taken advantage of the addictive nature of sugar and the population’s proclivity for added-sugar knowing full well the effects of doing so. Clever labeling and advertising, a common practice today that seems perfectly legal,³¹ further add to the appeal.³² As an example, a manufacturer in the U.S. can label an “energy” bar as containing real strawberries. This may then lead a buyer into falsely assuming that the “energy” bar has some equivalent value to a strawberry when, in reality, it may only contain a fractional percentage of that value. In contrast, European laws require that the manufacturer state the actual percentage, i.e., five percent.³³ Sadly, despite enormous amounts of “how to”

diet books, gymnasiums and fitness centers that advertise “lose weight fast” programs, and television programming that depict struggles by the obese to lose weight, the rates of obesity have not been slowed. As a preemptive measure reminiscent of lawsuits against the tobacco industry, Congress recently acted to protect the food and beverage manufacturing industry by enacting into law *The Personal Responsibility in Food Consumption Act*.³⁴ This statute provides authorization for federal agencies to emplace regulations that prevent obese people from filing “frivolous” lawsuits against food and beverage manufacturers.

Future readiness of the military is greatly affected by the current obesity epidemic, whether the obese person is an adult or child. Military recruiting depends heavily on having enough qualified applicants in the younger age group pools to volunteer for service. The size of this pool is currently already affected by other enlistment discriminators such as an applicant’s medical status, criminal record, education, and Armed Services Vocational Aptitude Battery (ASVAB) scores.³⁵ Overweight and obese applicants are routinely rejected for not meeting enlistment standards and this has now become the leading medical reason why enlistment applicants are rejected for service.³⁶ It would not be impossible then to foresee overweight and obesity continue to be the leading enlistment discriminator if obesity rates are not soon decreased. *Mission: Readiness* estimates that national security is entirely dependent on obesity rates being checked now. If not, the year 2030 is seen as the watershed year.³⁷ Additionally, the health impacts of obesity – diabetes, heart disease, and cancer - extract a heavy price on the federal budget, a quarter of which goes to health care.³⁸ The cost of diabetes alone has been estimated at \$174 billion.³⁹

The budgets for other programs that support national security – for example, DOD - are then looked at as targets for offsetting the increase in health care spending. The impact to national security by the increasing rates of childhood obesity is thus a valid concern. Its direct impact on an already shrunken recruiting pool and the attendant and indirect consequences of its impact on DOD's budget both figure prominently as the major factors of that concern.

Background and History of Causal Factors

The term “obesity” was first coined in the seventeenth century by an English physician. Prior to that, it was a rare phenomenon although it was already acknowledged some seven thousand years ago as a disease and a danger by the ancient civilizations of China, Greece, and Egypt.⁴⁰ It is therefore important to understand that the causal factors that led to its common appearance today can be traced back to pre-history, specifically the beginning of the Neolithic revolution (sometimes referred to as the Agrarian Transformation). This revolution, a major turning point in human nutrition history,⁴¹ is the first major factor that contributed to obesity. The agricultural and industrial revolutions, which exacerbated obesity to what it currently is today, followed this seminal factor.⁴² It is common anthropological knowledge that prior to the Neolithic revolution, pre-historic or Paleolithic humans were nomadic hunter-gatherers. These humans moved from one area to another following the game that provided the major portion of their nutrition. Their diet consisted of wild game, mostly those that provided protein through bulk meat, which was supplemented by nuts, berries, seeds, and fruits gathered through foraging. The majority of these food sources were seasonal in nature, an important factor for their diet. The human populations that lived near the coastal areas also subsisted on fish and other varieties of food found in

the littorals and sometimes further out at sea. Nearby bodies of water such as lakes and rivers were also exploited for the food sources they provided. These food sources sometimes provided the major protein source and supplemented land-based game for these pre-historic humans. These humans, mostly grouped into tribes, had to know the patterns of the game and plants they subsisted on in order to fully exploit them as their main food source. In analyzing this existence, what is important to note are three things: first, humans had to physically expend energy to acquire their food; second, the food sources were seasonal; and third, these food sources did not last long once they were gathered. Such a way of life and existence is rarely practiced today; most exceptions are located in non-urban areas in Africa, in South America's Amazon, the most northern parts of North America (the Inuit of Alaska and Canada are examples), and some parts of northern Europe such as Finland.

This type of existence lasted for over a million years and served to condition the human digestive system to food that grew naturally before humans turned to an agrarian existence.⁴³ This distinctive condition is important in the comparative analysis of what humans eat for their nutrition today and what humans ate for nutrition in prehistoric times. The result of this analysis is increasingly used today to show that obesity is a modern phenomenon indirectly caused by modern industrial farming which removed the requirement to hunt and forage (the physical expenditure of energy) and food manufacturing practices which transforms food into a different form through industrial processing methods. It is important to note though that industrial farming and industrial food processing were not deliberately set up to cause obesity. Rather, obesity is an unintended consequence of these two industries. In addition, the requirement to

hunt wild game and fish in order to survive also served to condition the human body's muscular and metabolic system. There is almost no comparison between the physical demands of pre-historic humans and those of modern humans. Research has shown that pre-historic humans had the muscularity and metabolic conditioning of modern Olympic athletes.⁴⁴ Such strength and conditioning would logically be required for them to successfully overtake game on an almost daily basis.

To overcome the enormous expenditures of energy required to travel long distances to follow, hunt, and kill game and to gather nuts, roots, berries, and fruits, humans gradually shifted to an agrarian system. The domestication of selected wild animals that were formerly hunted and the cultivation of plants that were formerly gathered in the wild enabled this shift and were undertaken over a period of time.⁴⁵ Thus, the requirement to follow herds of game animals and to forage for plants were no longer needed since the animals could be controlled and bred in a static area and the plants grown in nearby food plots. This control over a natural process served to stabilize communities into selected territories and soon led to the unintended consequence of war or physical violence to defend the resources of the community and its territory.⁴⁶ The biological and physical conditioning of the human body, occurring over a period of hundreds of thousands of years, also degraded when humans no longer needed to walk or run long distances for their food. These two factors – domestication and cultivation of animals and plants and reduced physical requirements – were the precursors to the appearance of excess weight in humans.⁴⁷ These factors not only served to upset the harmonious balance between humans and their natural environment – a major concern today⁴⁸ - but also upset the internal balance of their digestive and physiological systems.

The agricultural and industrial revolutions that followed the Neolithic period then became the catalyst to further excessive weight in humans.⁴⁹

Two other factors that impacted the human digestive system that were inherent in the shift to an agrarian system also deserve analysis and further consideration. This analysis provides greater understanding of the impact of agriculture on modern man's approach to nutrition and the systems built to sustain that nutritional approach. The first factor was the types of plants chosen for domestication and second, the human digestive system's reaction to those plants. As mentioned earlier, pre-historic humans were nomadic foragers who supplemented their main diet of meat with seasonal nuts, berries, roots, wild vegetables, and some fruits. This high protein, moderate fat and low carbohydrate diet did not contain any grains such as barley, wheat, and rice. These grains, chosen for domestication because of their high yield, nutritive value, and ability to thrive in open ground, quickly spread and became the staple for large populations throughout the world beginning approximately 9,000 years ago.⁵⁰ The nutritive value of these grains gives them a high glycemic index rating. This rating is an indicator of a food type's ability to raise blood glucose (or sugar) levels. Foods with a low glycemic index normally prompt a moderate rise in blood glucose, while food with a high glycemic index may cause blood glucose levels to increase above the optimal level.⁵¹ Research has shown that continued high blood glucose levels sustained over a period of time is a major contributor of weight gain.⁵² This sustained and excessive weight gain in turn contributes to greater tendencies for acquiring diabetes and hypertension.⁵³ The pre-historic human population's decision to shift their food source from a high protein and moderate fat diet, extracted mainly from animals, to a high carbohydrate diet, extracted

mainly from grains, thus started the trend towards excessive gains in weight. This shift, coupled with an increasingly sedentary lifestyle, ironically caused by the reduced requirement to hunt for the same animals that were replaced by grains as the main food source, inadvertently contributed to other problems beyond those of weight gain. The decision to introduce grains into the human diet indirectly contributed to these other problems when the Industrial Revolution came into full effect hundreds of years later.

The second major factor in the rise of obesity, the Industrial Revolution, served as the catalyst to increase its preponderance. The need to feed a large and growing population became the reason for industrializing farming - this is an important factor to consider since farmers did not plan or conspire to cause obesity. Thus, a formerly labor intensive process became more efficient as a result of that need. The introduction of machinery that replaced manual hand tools enabled major crops such as wheat and corn to be grown and harvested at greater yields with less need for physical labor. Combined with other efficiencies in chemistry and botany, farming became highly industrialized and, as a result, managed as business ventures. Livestock and major crops were also genetically manipulated to withstand undesirable environmental conditions in the soil, the weather, or pests. The invention of fertilizer contributed to this industrial efficiency by enabling farm soil to be used constantly and to produce greater yields in shorter time frames. Although greater yields of crops and livestock and their products fulfilled the requirement to provide the necessary calories for large populations, unintended consequences such as environmental damage from fertilizer and food poisoning soon became commonplace.⁵⁴ Although greater crop yields were realized, these yields did not necessarily equate to better nourishment.⁵⁵ Despite the

abundance of calories gained from these large yields, industrially grown food and its subsequent processing led to the term “empty calories”.⁵⁶ As further example, research has shown that, because of the increased use of synthetic fertilizers, fruits and vegetables grown today have fewer nutrients than those grown thirty years ago.⁵⁷ Routine cases of antibiotic resistant bacteria such as *salmonella* and *e coli* became indicative of the high stress placed on food production systems to increase outputs.⁵⁸

The industrialization of food also made eating them not only a health risk but a risk to the environment.⁵⁹ In contrast to what Paleolithic and Neolithic humans would face when they ate naturally occurring food sources, this risk has become higher because of the effects on health due to processed food and genetic engineering.⁶⁰ To further increase the efficiency of food production and increase its shelf life, manufacturers turned food production into a mechanical and highly processed system that is dependent on preservatives and artificial ingredients to increase the shelf life of their food products.⁶¹ These artificial ingredients mimic their naturally occurring namesakes and were invented to further reduce costs. Additional ingredients such as salt and sugar were then incorporated to make the food more palatable. The human body’s reaction to these artificial ingredients and preservatives, after thousands of years of familiarity with naturally occurring food, is typically negative. High salt content in food has been shown to contribute to diseases such as hypertension.⁶² High glycemic foods such as grain, when refined and then further processed with these added ingredients, most especially sugar, then add on more non-nutritive calories. These “empty” calories then contribute to an increase in the likelihood of weight gain.

A comparative analysis of the nutrition practices between Paleolithic humans, Neolithic humans, and modern humans shows that the trend is towards more caloric intake with an increasingly less nutritive value of those calories as the timeline approaches the twentieth century. Paleolithic and Neolithic humans ate what they indirectly knew through experience would best provide them needed energy. Their knowledge of what could be eaten together and what to avoid directly contributed to a meal that was naturally nutritious when compared to meals eaten by humans today. This practice continued until approximately the end of the twentieth century when food became increasingly processed. By the middle of the 1960's, fast food appeared, became commonplace, and started to replace more fresh and nutritious food as the main meal. Several factors contributed to the popularity of fast food. The efficiency and mass production of food made the ingredients in fast food relatively inexpensive and also easily prepared. Along with fast food, food with added sugar, by way of highly sweetened carbonated drinks and baked goods, also became part of the modern diet. The combination of mass produced and inexpensive food and added sugar led to nutritionally poor diets. To replace the vitamins and minerals lost in this combination, but is normally found in fresh food, supplementation became commonplace.⁶³ By the mid 1980's, obesity rates started rising.⁶⁴ Thus the trend in human nutrition, in a spread of over several thousands of years, went from optimal to marginal.

Background on U.S. Agricultural, Nutrition, and Physical Fitness Policies

The sedentary lifestyle brought on by the agricultural and industrial revolutions further magnified the challenges with controlling the population's weight gain. By the 1950's, the improvements in living standards that accompanied these two turning points in human history also brought on undesirable health costs.⁶⁵ Government leaders then

began looking to physical education and physical fitness to indirectly offset these costs. Ironically, like the reasons behind PL 396 and *Mission Readiness*' press release, physical education in public schools was started not because of health concerns but because of decreased military readiness. Statistics from the World War I draft showed that one out of three draftees was physically unfit for the rigors of combat.⁶⁶ These statistics led to government legislative action that ordered schools to improve their physical education programs.⁶⁷ While achieving some measure of success, these programs were not continuously sustained once implemented. Other priorities, one example being the Great Depression, became more important. It seems that only when national leaders placed emphasis on these programs, such as what has happened recently with First Lady Michelle Obama's program to reduce childhood obesity,⁶⁸ or when overwhelming evidence of degraded military readiness such as the WW I example above, were they implemented. Statistics gathered from the year 2000 show that "despite the wealth of knowledge concerning the benefits of physical education and physical activity, only 8% of elementary schools, 6.4% of middle schools, and 5.8% of high schools provide daily physical education to all of its students."⁶⁹ The main reasons for these disappointing statistics were pressures to improve academic skills and declining overall budgets.⁷⁰ Additionally, many school administrators believe that student health should not be a concern of schools but, instead, should be an issue that parents address as a responsibility.⁷¹ As a result of these various issues, physical education in public schools is not mandated by the federal government although a few states have recently made it a requirement. This has produced unintended consequences that affect the military. Increasingly, the problem of unfit high school

students transfers over to the military when high school graduates attempt to enlist and fail to pass a standard physical fitness test. When they do make it past that test they then struggle with the increased physical rigor required at basic military training.⁷²

The federal government's policies that address the nation's nutritional and physical fitness needs may be categorized as "post-consequence management" type policies. These policies are reactive as shown by the WWI and First Lady Michelle Obama examples above. Once these policies are promulgated they are not sustained for the long term and are reviewed or revised mainly when crises occur. As discussed earlier, agricultural and nutrition policies are not integrated to holistically address the nation's nutritional needs. While malnutrition is a valid and serious problem that policy must resolve or mitigate, the risk and unintended consequences of such policies - for example, the poor nutritional quality of our highly processed food - must also be addressed. Starting in the mid-nineteenth century, U.S. agricultural policies focused mainly on production and continue to be that way to this day.⁷³ These policies forced farming to become commercial ventures and small-scale farmers to either vastly improve production or get out of farming.⁷⁴ Successful farmers produced according to what the government dictated and were rewarded with subsidies. These subsidies primarily ensured the farming industry remained solvent, especially in the face of increasing global competition.⁷⁵ In the 1980's, because of overexpansion and overproduction, the farming industry started to fail. The media picked up on this crisis and the undesirable side effects of industrial farming. These side effects were environmental in nature and encompassed issues such as soil erosion, water quality deterioration by pesticides, large-scale animal confinement, and food safety.⁷⁶ An

analysis of the crises shows that these environmental issues overshadowed the issue of declining nutritional quality of food brought about by mass production. Several years later, the declining nutritional quality of food was elevated as the probable cause of obesity when obesity reached epidemic proportions. In the continuing search for the causal factors of obesity, farming policies were defended as an unlikely culprit.⁷⁷ Prior to the farming crisis of the 1980's, when U.S. sugar policy drove sugar prices higher, food and beverage manufacturers turned to abundant and cheap corn to remain competitive. These manufacturers found that an industrially-produced sweetener - high fructose corn syrup (HFCS) – could be made inexpensively from corn. HFCS, now a commonly used sweetener in soft drinks and food, was increasingly targeted as a probable cause of obesity.⁷⁸ Those defending farm policy argued that sugar policy - which led to high sugar prices and thus the invention of HFCS - and not the farm policies that led to cheap and abundant corn is to blame for obesity.⁷⁹ What is evident from this is that the impact of the unintended consequences in the change in policy for sugar, a food source, and corn, another food source, were not taken into account. This seeming lack of analysis points to uncoordinated efforts at the policy level for food and nutrition. The reactive nature of federal policy, which rarely takes the long view, can therefore be placed on the obesity culprit list.

A few months after September 11, 2001, the federal government looked internally in an attempt to understand and resolve the breakdown in communications between its agencies that led to tragedy on that day. The lack of intelligence sharing between major agencies responsible for ensuring the integrity of national security eventually led to the reorganization of the U.S.' homeland security apparatus.⁸⁰ The

obesity epidemic, although not as dramatic and shocking as the attacks that occurred on that day, is analogous to the homeland security challenge. The uncoordinated and non-integrated efforts of the three major agencies responsible for the policy areas – agriculture, nutrition, and physical fitness – that affect obesity are similar to policies of those major homeland security agencies that were in effect on 9/11. In 2007, a presentation at the American Public Health Association (APHA) conference stated that

Federal nutrition policies demonstrate significant contradictions within and between federal agencies, such as the Centers for Disease Control and Prevention and the United States Department of Agriculture. Despite a public health commitment to combat overweight and related chronic diseases, agricultural policy presents the potential to displace nutrition promotion through price supports and direct payments to designated agricultural producers. The degree to which agricultural policy promotes unhealthy foods is quantifiable through the Farm Bill subsidies and commodities programs.⁸¹

Agricultural and farming policies focus on ensuring that the nation's food supply remains plentiful and the population does not starve. The method to achieving this is through mass and over production of basic crops. The mass production in turn ensures low prices. This quantity over quality philosophy is understandable. Should food sources run low or prices become too high, a potential crisis may erupt and the government is likely to get the blame. Thus, placating the population is a hidden and ulterior motive.

Ironically, the APHA conference presentation made the following statement:

Resolved, that our American Medical Association support efforts (1) to reduce health disparities by basing food assistance programs on the health needs of their constituents, (2) to provide vegetables, fruits, legumes, grains, vegetarian foods, and healthful nondairy beverages in school lunches and food assistance programs, and (3) to ensure that federal subsidies encourage the consumption of products low in fat and cholesterol.⁸²

While the statement above is commendable, it shows a lack of knowledge of basic *healthy* nutrition for humans. It was shown earlier that Paleolithic humans did not

subsist on grains but rather subsisted heavily on animal protein and fat. The absence of modern diseases such as diabetes and hypertension during this period attest to the efficacy of this type of nutrition. The added prescription for vegetarian foods and products that are low in fat also amplifies this lack of knowledge. Despite the maligning of fat, a number of scientists are now acknowledging that animal fat can play a prominent part in a healthy diet.⁸³ Instead, the fats that are unhealthy are trans fat – those fats that are caused mainly through the processing of food.⁸⁴ Moreover, humans are classified as omnivores – they have been that type for thousands of years and the recommendation for vegetarian food and vegetarianism adds to more confusion. This confusion is evident in the number of diet books on the market today and is further exploited by businesses such as fitness clubs which are very much in abundance today. A count of these books marketed since the 1980's and, similarly, a count of fitness clubs across the nation would be exhausting.

Recommendations

What approach would be best to solve the nation's obesity epidemic? Would it help to change our food production systems and methods so that the food they produce is healthier? Or, would educating the nation on the dangers of eating those mass-produced and highly processed food be better? Would directing public schools and universities – those that receive government funding of any kind – to make physical and nutrition education mandatory assist in solving the problem? Or, would a unilateral change in our agricultural, nutrition, and physical fitness policies help? What should the military do to assist in solving the problem so as to maintain its readiness, either in concert with other government agencies or unilaterally if necessary?

There are several options available for policymakers to consider. These options are based on the concept that the federal government should take the lead in solving the obesity epidemic and that it should do so through the reassessment, update, and synchronization of the various federal government policies in nutrition, agriculture, and physical fitness. Embedded into these options are the basic requirements to realign the sole responsibility for nutritional guidance promulgation from the USDA to HHS and to make physical and nutritional education mandatory in public schools and in all other schools that receive federal funding or grants.

To mitigate and then eventually reverse the obesity epidemic, the U.S. government should re-assess, synchronize, and update current agricultural and nutrition policies so that they focus on providing the nutrition that humans were designed to eat – those that are programmed into our genetic code.⁸⁵ It is important that this nutrition be based as much as possible on food that is fresh, as minimally processed as possible, and with no sugar added. This should be done, as much as possible, in collaboration with the farming and food and beverage industries. Along with this, individual taxpayer incentives should also be pursued to encourage the general population to get or remain healthy. These incentives may be accomplished via tax deductions, as an example, or through some other monetary incentive scheme.

To gain Congressional support, policymakers should invite and encourage the farming and food and beverage manufacturing industries to collaborate in the reassessment and revision of agricultural and nutritional policies in order to resolve the obesity crises. These industry groups have powerful lobbies in Congress and it would be difficult to overcome those lobbies and placate Congress if the industries do not

agree with policy revisions. The approach is to encourage the two groups to take part of the responsibility for the obesity epidemic - an epidemic brought on inadvertently by the industrialization of food - and to make good on correcting this unintended consequence. This is not meant to bring public embarrassment on any organization but to show that the resolution of the epidemic is everyone's responsibility and not just the consumer. It would be in the best interest of all to agree to this effort and proactively turn what would possibly be an "information operations" campaign that has already become negative in nature⁸⁶ into a positive one. Using the resources of the government and the two main industries to collectively resolve the epidemic would also show that the free market is a self-correcting system. The end state of this collaborative re-assessment is the production of food that is reduced in its processing, increased in its nutritive value, and affordable in price. This option serves to protect the consumer and mitigates the potential collapse of the two major food industries, an event that the nation cannot afford and must therefore be avoided.

If this collaboration is delayed more than what the DOD can afford - a year or two at the most, the option for the military to act unilaterally should be seriously considered. This option should be taken to not only buy time for policymakers to resolve any impasse but also to show that the military is willing to take corrective action to ensure national security. This unilateral action should be executed carefully and done through deliberate consultation with policy makers to impress upon them the seriousness the military sees in the situation. It must also be taken to provide fair warning and must not be seen as an affront and usurpation of legal authority but rather as the military implementing a military solution to a problem already affecting the Services. The

operational details of this unilateral action should focus on revamping the military's nutrition program so that it focuses on fresh food, reduces the use of processed food and added sugar in the meals served to Servicemembers, reduces the sales of products with added sugar in its facilities such as commissaries and exchanges, and terminates the sales of fast food in its bases - for example, the removal of vending machines that sell processed snacks and beverages - and terminate the contracts of fast food restaurants on military bases. Additionally, the military should also reassess the nutritive value of its operational rations to reduce the empty calories, added sugar, and trans fat in those rations. Lastly, the Services should research the feasibility of designating and training enlisted members as unit nutritional technicians. This concept is similar to the requirement to have trained sexual assault and equal opportunity representatives at unit levels.⁸⁷ These technicians should be trained and then emplaced at small unit levels – for example, one per company – to assist unit commanders in executing their weight control programs. Small scale outreach operations similar to this are currently being conducted by the U.S. Army Physical Fitness Research Institute (APFRI) at the U.S. Army War College.⁸⁸ With increased funding, APFRI will be able to increase its number of outreach operations.⁸⁹ The commandant of the War College believes that educational outreach such as what APFRI conducts, especially when instituted at entry levels of the military (for example, basic and advanced individual training and officer basic courses) will pay dividends in improving nutrition in the U.S. Army.⁹⁰

Congress and the Executive Branch should also work to implement individual taxpayer incentives that reward healthy behavior. These incentives should seek to entice the American public to adopt healthy lifestyles and avoid risky behavior. While

the cost of these incentives may be initially high, the preventative measures they take against diseases such as diabetes and hypertension are immeasurable and offset the costs of implementing the incentives in the long run. These incentives can take the form of tax cuts or reduced taxes on fresh foods with a corresponding increase in taxes on unhealthy foods, especially those with added sugar. These incentives should be implemented gradually through a phased approach. The operational details of this action should focus on educating the general public on eating healthy and the implementation of decreased taxes on fresh foods such as vegetables as a first step. Once those have been completed, the increased tax on unhealthy foods such as those with added sugar – for example, beverages, candy, and pastries – and highly processed foods should be implemented a year or two later.

Policymakers should also assess and revamp the Supplemental Nutrition Assistance Program (SNAP, but more commonly known as the Food Stamp Program) to ensure that unhealthy food is highly discouraged from the choices available for purchase. Methods should be devised to provide more recipient purchasing power for fresh and healthy food instead of unhealthy food. Historically, the lower classes of U.S. society - the main focus of SNAP, volunteer to serve in the military. Sadly, that class is increasingly no longer immune to the effects of obesity.⁹¹ In addition, Congress and the Executive Branch should take further steps to realign nutrition policymaking by shifting sole responsibility for that policymaking from the Department of Agriculture to the Department of Health and Human Services. An agency whose focus is on health is the more obvious choice for nutrition policy formulation rather than an agency focused on

farming. This shift should also mitigate potential conflicts of interest between nutrition policy and the food and beverage industry once farming policy is taken out of the loop.

Finally, physical fitness, physical education, and nutrition education need to be made mandatory subjects in all public schools and in other schools, to include colleges and universities that receive federal aid. Currently, physical education is not a mandatory subject in a majority of public schools across the nation⁹² and the federal and state governments ought to consider this education as part of the policy revision process. The lack of physical fitness in schools, to the point of cutting down on recess time, is seen as a contributor to the obesity epidemic.⁹³ Preparing students to become contributing citizens not only entails education in mathematics, history, critical thinking and other important subjects but also requires physical preparation to meet the rigors of life. Proper nutrition is necessary but insufficient for an enhanced quality of life because total fitness encompasses several areas, to include avoiding risky behavior such as drug abuse.⁹⁴ Physical fitness is the variable that enables nutrition to fuel the human body to function properly.

Conclusion

It is not too late to reverse the obesity epidemic and prevent Americans from becoming “too fat to fight” in the future.⁹⁵ While the choice to place into effect available options is not difficult to make, putting those options into policies that will work to reverse the obesity trend becomes politically risky for money is at stake. Putting these self-interests aside entails losing money that is often gained at the expense of the public’s health.⁹⁶ Those who have the power to reverse this dismal trend - lawmakers, policymakers, educators, food and beverage manufacturers and the farming industry - must put their self-interests aside. Doing this would not only sustain America as a

military power but also a leader in world health. Returning to the diet that humans have genetically adapted to is not the only definitive answer. The industry that produces our food must be kept intact to support a population that depends heavily on them. Further, a collapse of the farming industry may move that trend towards the opposite end of the nutritional spectrum - malnutrition. Instead, a common-sense balance must be sought where industrial farming remains the main nutritional provider and food manufacturers seek ways to provide healthy and nutritious food that has a sustainable shelf life.

Additionally, a culture of being physically active – that is, enjoying the outdoors, playing a sport of choice (whether as an individual, on a team, or with family and friends) or making time during the day to spend a few minutes working out – needs to be inculcated in children at the earliest age. Aversion to physical activity by an individual or groups of individuals should not be a reason to deny children the time to participate in those activities.

One of the more insightful recommendations to making headway in reversing the obesity trend comes from Professor Barry Popkin at the University of North Carolina at Chapel Hill:

Obesity is so widespread and intractable an issue that it's hard to know how to move forward. However, my experiences dealing with poverty and hunger in the United States and India impressed upon me that *individuals can make a major difference* [italics are mine]. It may not be easy, and big changes certainly don't happen quickly. Making changes in our communities, our children's schools, our churches, and our local and regional institutions is easier than making changes at the national and global levels. Nevertheless, change is possible at all levels.⁹⁷

National support to our military's readiness requires this type of commitment, support, and change from leaders at all levels. Those who depend on the military to remain

ready to defend them need it. Most of all, our Soldiers, Sailors, Airmen, Marines, and Civilians deserve it.

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